ABSTRACT

Isolated, mammalian, bone marrow-derived, lineage negative hematopoietic stem cell populations (Lin^- HSC) contain endothelial progenitor cells (EPC) capable of forming retinal blood vessels. At least about 50% of the cells in the isolated Lin^- HSC population include cell surface markers for CD31 and c-kit. Up to about 8% of the cells can include the Sca-1 cell marker, and up to about 4% of the cells can include the Flk-1/KDR marker. The isolated Lin^- HSC populations of the present invention are useful for treatment of ocular vascular diseases. The isolated Lin^- HSC populations that have been transfected with therapeutically useful genes are also provided, which are useful for delivering genes to the eye for cell-based gene therapy.